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10/661,028	09/11/2003	David M. Pepper	B-4077 618504-4	6773

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EXAMINER

THOMAS, BRANDI N

ART UNIT	PAPER NUMBER
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2873

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/661,028	Applicant(s) PEPPER ET AL.	
	Examiner BRANDI N. THOMAS	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 22-26 and 33-41 is/are pending in the application.
- 4a) Of the above claim(s) 3, 4 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-7, 9-11, 22-26 and 33-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 6, 7, 9-11, and 33-40 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's Admitted Prior Art (AAPA).

Regarding claim 6, AAPA discloses, in figures 4A and 4B, an optical retro-reflective apparatus for modulating an optical beam, the apparatus comprising: a retro-reflecting structure including a substrate (44a) moveable grating structure (44b) (page 10); and a micromechanical device (26) moving the moveable grating structure (44b) relative to the substrate (44a) to cause the retro-reflecting structure to switch between a retro-reflective mode of operation and a non-retro-reflective mode of operation, the micromechanical device being responsive to a signal to impart modulation to an optical beam which is retro-reflected from the retro-reflecting structure (pages 10 and 11).

Regarding claim 7, AAPA discloses, in figures 4A and 4B, an optical retro-reflective apparatus for modulating an optical beam, wherein the retro-reflecting structure includes a corner cube arrangement with said substrate and moveable grating structure (44b) forming at least a portion of one reflecting surface of the corner cube

Art Unit: 2873

arrangement and at least another reflecting surface forming another reflecting surface of the corner cube arrangement (figures 4a and 4b).

Regarding claim 9, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus for modulating an optical beam, wherein said one reflecting surface of said corner cube arrangement is pixelated by a plurality of moveable grating structures (44b) (pages 10 and 11).

Regarding claim 10, AAPA discloses, in figures 4A and 4B, an optical retro-reflective apparatus for modulating an optical beam, wherein the gratings of one moveable grating structure (44b) of said plurality of moveable grating structures is rotated about a central axis thereof related to neighboring moveable grating structures (44b) (pages 10 and 11).

Regarding claim 11, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus for modulating an optical beam, wherein the at least another reflecting surface has a moveable grating structure associated therewith which is responsive to said signal for imparting modulation to the optical beam that is retro-reflected from the retro-reflecting structure (pages 10 and 11 and figures 4a and 4b).

Regarding claims 33 and 35, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability comprising: first reflective surface; a second reflective surface having a first position in which the retro-reflecting apparatus retro-reflects an optical beam and having a second position in which the retro-reflecting apparatus does not retro-reflect the optical beam (12) (pages 6 and 7); and a micromechanical device (26) operable to move the second reflective surface between

Art Unit: 2873

the first position and the second position (page 7), wherein the first reflective surface and the second reflective surface are parallel to each other in the first position and the second position (figures 1).

Regarding claim 34, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, wherein the first and second positions being spaced by a distance less than a wavelength of the optical beam (page 11).

Regarding claim 36, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, wherein the substrate is at least partially reflective (page 11).

Regarding claim 37, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, further comprising a partially reflective surface (pages 10).

Regarding claim 38, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, wherein the moveable grating structure (44b) is configured to at least partially reflect an optical beam towards the partially reflective surface (pages 11 and 12).

Regarding claim 39, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, further comprising a partially reflective surface (pages 11 and 12).

Regarding claim 40, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, wherein the moveable grating structure

Art Unit: 2873

(44b) is configured to retro-reflect an optical beam towards the partially reflective surface when in the first position (pages 10 and 11).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5, 22-26, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Browning (3980818).

Regarding claims 1 and 22, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability comprising: a retro-reflecting structure (24) including a pair of reflective surfaces (page 6); and a micromechanical device (26) for moving at least one of the reflective surfaces of said pair of reflective surfaces relative to another one of the reflective surfaces of said pair of reflective surfaces a distance which causes the pair of the reflective surfaces to switch between a reflective mode of operation and a transmissive mode of operation (pages 6 and 7) but does not specifically disclose a Fabry-Perot. Browning discloses a fabry-perot retro reflecting structure (col. 7, lines 54-57). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to combine the device of

Art Unit: 2873

AAPA with the fabry-perot structure of Browning for the purpose of transmitting the scanning laser output (col. 7, lines 54-57).

Regarding claim 2, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, wherein the retro-reflecting structure includes a corner cube arrangement with the pair of reflective surfaces forming at least one angled reflecting surface of the corner cube arrangement and another reflecting surface forming another angled reflecting surface of the corner cube arrangement (page 6).

Regarding claim 5, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, wherein the micromechanical device is a MEM device (26) (page 7) but does not specifically disclose wherein the MEM device is made using photolithographic techniques. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F. 2d 695, 698, 227 USPQ 964, 966 (fed Cir. 1985).

Regarding claim 23, AAPA discloses, in figures 1, 2A, and 2B, an apparatus for retro-reflecting and modulating an optical beam, wherein the retro-reflecting structure includes at least a pair of reflective surfaces, at least one of said surfaces including the

Art Unit: 2873

at least one optical element which is moved less than a wavelength of the optical beam in order to modulate the retro-reflected beam (pages 6 and 7).

Regarding claim 24, AAPA discloses, in figures 1, 2A, and 2B, an apparatus for retro-reflecting and modulating an optical beam, wherein the pair of reflective surfaces are arranged in either a cat's eye or a corner cube configuration (pages 6 and 10).

Regarding claim 25, AAPA discloses, in figures 4A and 4B, an apparatus for retro-reflecting and modulating an optical beam, wherein the retro-reflecting structure includes a substrate (44a) and a grating structure (44b), at least one of said substrate (44a) and said grating structure (44b) comprising the at least one optical element which is moved less than a wavelength of the optical beam in order to modulate the retro-reflected beam (pages 10 and 11).

Regarding claim 26, AAPA discloses, in figures 4A and 4B, an apparatus for retro-reflecting and modulating an optical beam, wherein the substrate (44a) and grating (44b) are arranged in either a cat's eye or a corner cube configuration (pages 10 and 11).

Regarding claim 41, AAPA discloses, in figures 1, 2A, and 2B, an optical retro-reflective apparatus with modulation capability, wherein the retro-reflecting structure includes a first grating structure and a second grating structure, at least one of said grating structures comprises the at least one optical element which is moved less than a wavelength of the optical beam in order to modulate the retro-reflected beam (pages 10 and 11).

Response to Arguments

4. Applicant's arguments filed 4/28/09 have been fully considered but they are not persuasive. Applicant argues that a person skill in the art would not add scanning to the retroreflectors of Figs. 1, 2A and 2B in applicant's patent application based on the teachings of Browning or any other teaching. The Applicant writes that "it makes no sense to do that". However, Browning discloses that the retroreflector transmits the scanning laser output; it does not state that the reflector scans. Even if the prior art Browning used the retroreflector for scanning, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiated the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations (*Ex parte Mashim*, 2 USPQ2d 1647 (1987)). Applicant also argues that Browning does not function as a retroreflector. Browning discloses a retroreflector in a fabry-Perot resonant cavity. The Examiner would like the applicant to point out the column and page numbers as to why Browning's retroreflector does not function as a retroreflector (col. 7, lines 54-57). Applicant argues that: "...one cannot tell from the Examiner's analysis what the proposed combination of Fig. 7 of Browning and Figs. 1, 2A and 2B in applicant's patent application is supposed to look like." "How does that work?" "How does it become half silvered as taught by Browning?" "And why replace Browning's perfectly good retroreflectors with the more complicated device of Fig. 2A in the first place? The bottom line is that there is absolutely no reasonable rationale to do that." The MPEP 2145 states that "the test for obviousness is not whether the features

Art Unit: 2873

of a secondary reference may be bodily incorporated into the structure of the primary reference. Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). See also In re Sneed, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983) ("it is not necessary that the inventions of the references be physically combinable to render obvious the invention under review."); and In re Nievelt, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973) ("Combining the teaching of references does not involve an ability to combine their specific structures."). Applicant also argues with respect to dependent claims 7, the Examiner asserts that Figs. 4A and 4B disclose a corner cube. That is also not true. Those figures depict a grating, and neither a retroreflective device nor a corner cube. AAPA discloses on page 4, last paragraph that the retroreflector is a corner cube.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDI N. THOMAS whose telephone number is (571)272-2341. The examiner can normally be reached on Monday - Thursday from 6-4:30.

Art Unit: 2873

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brandi N Thomas/
Examiner
Art Unit 2873

BNT

/Scott J. Sugarman/
Primary Examiner, Art Unit 2873